CLAIMS

What is claimed is:

1. A method for manufacturing rimless spectacles having lenses and rimless supporting structures, the method comprising the steps of:

providing a connection region between a lens and a rimless supporting structure, said connection region having a radiation absorbing dye having a predetermined wavelength absorbing band; and

exposing the radiation absorbing dye to a source of radiation operating at a wavelength within the predetermined wavelength band of the radiation absorbing dye.

2. The method according to claim 1, wherein said step of providing further comprises coating a surface on the rimless support structure within the connection region with the radiation absorbing dye.

3. The method according to claim 1, wherein said step of providing further comprises coating a surface of the lens within the connection region with the radiation absorbing dye.

4. The method according to claim 1, wherein said step of providing further comprises incorporating the radiation absorbing dye into the lens during manufacturing of the same.

5. The method according to claim 1, wherein said step of providing further comprises incorporating the radiation absorbing dye into the rimless support structure during manufacturing of the same.

6. The method according to claim 1, wherein the connection region comprises areas on the edges of the lens and rimless supporting structures that are in contact with each other during the step of exposing.

7. The method according to claim 1, wherein said step of exposing fuses the lens to the rimless supporting structure in the connection region.

8. A method for assembling an optically transparent, rimless supporting tab onto an ophthalmic lens comprising the steps of:

providing a thermoplastic supporting tab with a profiled surface extending in a circumferential direction and coating the surface with a radiation absorbing dye that is substantially transparent in visible light following irradiation;

trimming a plastic ophthalmic lens to form a periphery for mating to said coated profiled surface; and

assembling the tab onto the periphery and irradiating the dye within the dye's absorption band through the tab or lens to fuse the tab onto the ophthalmic lens thereby forming an integral supporting assembly that substantially avoids optical interference with the ophthalmic lens.

9. The method according to claim 8, wherein upon irradiation the dye converts absorbed radiation into localized heat via vibrational relaxation.

10. The method of claim 9, wherein said radiation absorbing dye is selected from the group consisting of a near infrared absorbing dye and an infrared absorbing dye, and wherein the dye highly transmits all wavelengths in the visible spectrum.

11. The method according to claim 9, wherein said radiation absorbing dye is a narrow band visible light absorbing dye that highly transmits all wavelengths outside the narrow band.

12. The method according to claim 11, wherein said dye decomposes into substantially invisible by-products following irradiation.

13. A method for manufacturing rimless spectacles having plastic lenses and rimless supporting structures, the method comprising the steps of:

joining the rimless supporting structure with an edge of the lens in an abutting relation; and

fusing the lens and rimless support structure together at the point of contact.

14. The method according to claim 13, wherein said step of joining further comprises the step of providing connection region between the edge of a lens and the rimless

supporting structure, said connection region having a radiation absorbing dye having a predetermined wavelength absorbing band.

15. The method according to claim 14, wherein said step of fusing further comprises the step of exposing the radiation absorbing dye to a source of radiation operating at a wavelength within the predetermined wavelength band of the radiation absorbing dye.

16. The method according to claim 14, wherein said step of providing further comprises coating a surface on the rimless support structure within the connection region with the radiation absorbing dye.

17. The method according to claim 14, wherein said step of providing further comprises coating a surface of the lens edge within the connection region with the radiation absorbing dye.

18. The method according to claim 14, wherein said step of providing further comprises incorporating the radiation absorbing dye into the lens during manufacturing of the same.

19. The method according to claim 14, wherein said step of providing further comprises incorporating the radiation absorbing dye into the rimless support structure during manufacturing of the same.

20. The method according to claim 14, wherein the connection region comprises areas on the edges of the lens and rimless supporting structures that are in contact with each other during the step of fusing.